

AMENDMENTS TO THE CLAIMS

1. (Presently Amended) A base station apparatus comprising:

a downlink ~~transmission-section~~ transmitter that transmits a first signal with a directivity directed to a mobile station apparatus and a second signal with directivity wider than that of the first signal;

a ~~reception-section~~ receiver that receives a reception power ratio of the first signal to the second signal measured in the mobile station apparatus;

a ~~determining-section~~ determiner that determines whether the directivity of the first signal should be changed based on a difference between a transmission power ratio of the first signal to the second signal and the reception power ratio; and

a directivity ~~control-section~~ controller that changes the directivity of the first signal based on a result of a determination by the ~~determining-section~~ determiner.

2. Canceled

3. (Presently Amended) The base station apparatus according to claim 1, wherein, if the difference between the reception power ratio and the transmission power ratio is greater than a first threshold and the mobile station apparatus to which the first signal was transmitted requests the transmission power to be increased, the ~~determining-section~~ determiner determines that the directivity of the first signal should be changed.

4. (Presently Amended) The base station apparatus according to claim 1, wherein, if the difference between the reception power ratio and the transmission power ratio is greater than a first threshold and the reception power of a signal transmitted from the mobile station apparatus to which the first signal was transmitted is smaller than a

second threshold, the ~~determining section~~ determiner determines that the directivity of the first signal should be changed.

5. (Presently Amended) The base station apparatus according to claim 1, further comprising a transmission power ~~control section~~ controller that controls transmission power of a transmission signal, the transmission power ~~control section~~ controller not changing the transmission power if the ~~determining section~~ determiner determines that the directivity should be changed.

6. (Presently Amended) The base station apparatus according to claim 1, wherein, if the ~~determining section~~ determiner determines that the directivity should be changed, the directivity ~~control section~~ controller changes the directivity orientation without changing the width of the directivity.

7. (Presently Amended) The base station apparatus according to claim 1, wherein, if the ~~determining section~~ determiner determines that the directivity should be changed, the directivity ~~control section~~ controller broadens the width of directivity of the first signal, adjusts transmission power, changes the directivity orientation and returns the width of directivity to the original value.

8. (Presently Amended) The base station apparatus according to claim 1, wherein, if the ~~determining section~~ determiner determines that the directivity should be changed, the directivity ~~control section~~ controller broadens the width of directivity of the first signal, adjusts the directivity orientation and then returns the width of directivity to the original value.

9. (Presently Amended) The base station apparatus according to claim 1, wherein the ~~determining section~~ determiner sets a third threshold greater than a first threshold, and if the difference between the reception power ratio and the transmission power ratio is greater than the third threshold, determines that a directivity shift of the first signal is large, and if the difference between the reception power ratio and the transmission power ratio is greater than the first threshold and smaller than the third threshold, determines that the directivity shift of the first signal is small.

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10. (Presently Amended) The base station apparatus according to claim 9, wherein if the ~~determining section~~ determiner determines that the directivity shift of the first signal is large, the ~~directivity control section~~ controller broadens the width of directivity to adjust the directivity, and if the ~~determining section~~ determiner determines that the directivity shift of said ~~the~~ first signal is small, the ~~directivity control section~~ controller does not change the width of directivity but changes the directivity orientation.

11. (Presently Amended) The base station apparatus according to claim 9, wherein, if the ~~determining section~~ determiner determines that the directivity shift of the first signal is large, the ~~directivity control section~~ controller broadens the width of directivity, adjusts the directivity and then returns the width of the directivity to the original value, and if the ~~determining section~~ determiner determines that the directivity shift of the first signal is small, the ~~directivity control section~~ controller does not change the width of directivity but changes the directivity orientation.

12. (Presently Amended) A mobile station apparatus comprising:

a first ~~measuring section~~ measurer that measures a reception power of the ~~a~~ first signal transmitted from the base station apparatus according to ~~claim 1~~ to the mobile station according to claim 1;

a second ~~measuring section~~ measurer that measures reception power of the ~~a~~ second signal transmitted from the base station apparatus to an apparatus other than the mobile station; and

an uplink ~~transmission section~~ transmitter that transmits measurement results of the first measurer and second measurer ~~measuring sections~~ to the base station apparatus.

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13. (Presently Amended) The mobile station apparatus according to claim 12, further comprising a reception power ~~calculating section~~ calculator that calculates a reception power ratio, which is a ratio of the reception power of the first signal to the reception power of the second signal, wherein the uplink ~~transmission section~~ transmitter transmits the reception power ratio.

14. (Presently Amended) The mobile station apparatus according to claim 13, wherein the reception power ~~calculating section~~ calculator uses a common signal applicable to any mobile station apparatus as the second signal.

15. (Presently Amended) A radio communication method, ~~wherein~~ comprising:
transmitting, by a base station apparatus, ~~transmits~~ a first signal having a directivity directed to a mobile station apparatus, ~~transmits~~ and a second signal to an apparatus other than the mobile station apparatus with directivity wider than that of the first signal [[,]] ;

measuring, by the mobile station apparatus, ~~measures the~~ a reception power of the
first signal and the second signal and ~~transmits~~ transmitting the measurement results to
the base station apparatus[[,]]:

measuring, by the base station apparatus, ~~measures a~~ transmission power ratio,
which is a ratio of a transmission power of the first signal to ~~the~~ a transmission power of
the second signal [[,]]:

measuring ~~measures a~~ reception power ratio, which is a ratio of the reception
power of the first signal to the reception power of the second signal transmitted from the
mobile station apparatus [[,]]:

determining ~~determines whether~~ the directivity of the first signal should be
changed based on ~~the~~ a difference between the transmission power ratio and the
reception power ratio; and

changing ~~changes the~~ directivity of the first signal based on a determination result.

16. (Original) The radio communication method according to claim 15, wherein
the mobile station apparatus that received the first signal calculates a reception power
ratio and transmits the reception power ratio to the base station apparatus.

17. (Original) The radio communication method according to claim 16, wherein,
if the difference between the transmission power ratio and the reception power ratio is
greater than a predetermined first threshold, the base station apparatus changes the
directivity of the first signal.

18. (Original) The radio communication method according to claim 16, wherein,
if the difference between the reception power ratio and transmission power ratio is

greater than a predetermined first threshold and at the same time the mobile station apparatus that received the first signal requests transmission power to be increased, the base station apparatus changes the directivity of the first signal.

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Cont 19. (Original) The radio communication method according to claim 16, wherein, if the difference between the reception power ratio and the transmission power ratio is greater than a predetermined first threshold and at the same time the reception power of a signal transmitted from the mobile station apparatus that received the first signal is smaller than a predetermined second threshold, the base station apparatus changes the directivity of the first signal.

20. (Presently amended) The base station apparatus according to claim 1, wherein when the difference between the transmission power ratio and the reception power ratio is greater than a first threshold, the ~~determining section~~ determiner determines a change in directivity of the first signal.
